

SOLUTION AT-A-GLANCE

CHALLENGE

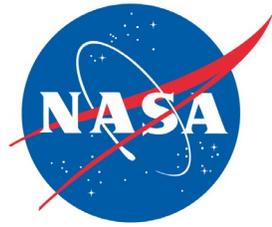
To effectively test their rocket propulsion systems, NASA SSC needed better application availability and performance from its data storage infrastructure both before and after the testing.

SOLUTION

DataCore™ SANsymphony™ virtualization software and reporting and system management tools.

RESULTS

Implementing a software-defined storage (SDS) solution empowered the SSC to deliver the high availability and better overall performance needed while enabling risk avoidance. In addition, the solution also allowed for improved capacity management and data storage utilization as well as hardware independence and flexibility when upgrading. Storage resources are now easier to manage and easier to scale, which drive cost savings and protects current and future IT investments.



NASA Needs High Availability and Performance for Rocket Testing

The John C. Stennis Space Center (SSC), located in southern Mississippi, is one of 18 facilities throughout the country operated by the National Aeronautics and Space Administration (NASA). SSC is NASA's largest and primary testing facility for rocket propulsion systems. ASRC Federal serves as the trusted systems integrator for the data center at NASA Stennis Space Center, and is a DataCore customer.

NASA'S IT AND DATA STORAGE MISSION-CRITICAL CHALLENGE

As the data center continued to grow and become more of a critical service to the space center, Stennis Space Center needed a storage solution that could provide the continuous availability and speed it required. The systems integrator, working with the space center, reached out to DataCore for a high-performance, high-availability software-defined storage (SDS) solution.

"Because each rocket engine test can cost upwards of \$1,000,000, it is critical that the numerous IT functions on which these trials depend be available and running for the 72 hours prior to the test, during the exercise, and for the 72 hours afterwards," says David Oakes, ASRC's systems support manager at Stennis Space Center. "DataCore meets the high performing, fail-safe criteria the space center requires with so much money at stake. It can bypass any storage glitches to keep the tests running without interruption."

VIRTUALIZATION SOFTWARE LETS SSC IT DO MORE WITH LESS

According to Lamar Nicholson, storage and virtual environment architect, "Virtualization helped us realize tremendous business value from relatively modest assets. Virtualizing our servers and storage has truly enabled us to do more with less, reduce labor-intensive maintenance and realize a more agile IT infrastructure.

"DataCore is definitely one of the main reasons our mission-critical apps run faster; the SANsymphony caching and performance acceleration capabilities play a vital role. Moreover, DataCore makes great use of the SSDs to further boost performance.

"I like to see what storage resources are in use and how they are being used. I've had a lot of experience with various sub-systems. DataCore's reporting and system management tools offer much better insight for the system administrator and deliver far more powerful and comprehensive analytics than other system management and SAN monitoring tools that I've tried in the past. Utilization metrics are also easily gathered and presented."



HARDWARE-AGNOSTIC AND OTHER BENEFITS FROM DATACORE SOFTWARE-DEFINED STORAGE

The overriding benefit for NASA Stennis Space Center has been attaining high availability for its IT systems so that uptime or “availability” of applications is assured. Lamar Nicholson also reports that: “We now have continuous availability made possible by the synchronous mirroring and with that, we’ve met our primary objective. Our freedom to choose the hardware that best suits our needs both technically and financially, and to refresh at will, is the added value and an enormous strength of the DataCore solution. This assures that we will be able to deliver with confidence the IT services critical to meeting the goals of Stennis Space Center and thus better support America’s efforts in space exploration.”

SOFTWARE-DEFINED STORAGE FOR EASIER IT MANAGEMENT

Lamar Nicholson says that a virtualized storage infrastructure delivers the automation needed to make systems management easy and efficient. “Using DataCore at the heart of our software-defined storage strategy has enhanced our flexibility, while hardening our environment in the best of ways. Between the virtualized machines and the virtualized storage pool behind them, we now have a rock solid data center with outstanding response, great data protection and fantastic resiliency.

“The portability of SANsymphony allows Stennis to move our virtualized storage platform onto newer, more innovative and faster nodes as they arrive in the market. This really provides us with investment protection, making sure we get the absolute highest return on our hardware upgrades. On the flip side, we save so much being able to extend the life of legacy equipment, yet it comes with peace of mind knowing newer boxes will integrate seamlessly.

“I cannot say enough about the ease of data migration afforded us. We can introduce new storage sub-systems and migrate databases quickly and easily. Previously, having to manually move something was always cumbersome, time consuming, not to mention very disruptive.”

ABOUT DATACORE SOFTWARE

DataCore is a leading provider of software-defined storage and hyperconverged infrastructure solutions powered by Adaptive Parallel I/O technology, delivering higher performance, greater application workload productivity and cost savings. DataCore leverages the multi-core advances and cost efficiency of off-the-shelf x86 server platforms to overcome the IT industry’s biggest problem, the I/O bottleneck. With DataCore, customers enjoy faster application response times and lower costs by making full use of their available computing resources to multiply productivity. The SANsymphony™ software-defined storage product pools diverse storage despite differences and incompatibilities among manufacturers, models, and generations of equipment. The software can span multiple locations and devices to bring them under the control of a common set of enterprise-wide data services for management automation and infrastructure simplification. DataCore Hyper-converged Virtual SAN software provides similar services using the internal or direct-attached storage spread across physical or virtual servers in a cluster.

The company has been privately held since its founding in 1998, and today has more than 10,000 customer sites across the globe. DataCore solutions are also available within turnkey appliances from hardware manufacturers including Lenovo.

IT ENVIRONMENT DESCRIPTION AT-A-GLANCE

- **Size of Data Center**
Over 265 TBs of data virtualized
- **Number of Users**
2,700
- **Number of Virtual Servers & Hosts**
180+ VMs; 20 hosts
- **Primary Server Vendor**
Dell – DataCore runs on Dell servers (4 of them).
- **Storage Vendor**
Dell storage servers (3); Sun; Promise; Infotrend
- **Server Virtualization Platform**
VMware
- **Software-defined Storage and Storage Virtualization Platform**
SANsymphony
- **Operating System**
Microsoft Windows; Solaris 10 x86 & Solaris 11 x86; Linux CentOS 5.8 & 6.3
- **Auto-Tiering**
Yes
- **Solid state disks (SSDs) or flash storage deployed**
Texas Memory Systems Ramsan
- **Primary business applications**
Oracle, SQL, PTC Windchill, Web Server (IIS 7), SharePoint, Project Server, FileMaker Pro, IBM Maximo
- **Vertical/industry-specific Apps**
PTC Windchill. PTC Windchill manages, cross-references, and provides visibility to all product-related content including MCAD, ECAD, documents and software

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